

Effective September 5, 1942

TITLE 7--AGRICULTURE
CHAPTER III--BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
PART 301--DOMESTIC QUARANTINE NOTICES

JAPANESE BEETLE ADMINISTRATIVE INSTRUCTIONS MODIFIED

Pursuant to the authority conferred upon the Chief of the Bureau of Entomology and Plant Quarantine by § 301.48-6, Chapter III, Title 7, Code of Federal Regulations [regulation 6 of the rules and regulations supplemental to Notice of Quarantine No. 48 on account of the Japanese beetle], paragraph (1) of § 301.48b [circular B. E. P. Q. 499, issued June 9, 1939] is hereby amended effective September 5, 1942, by the addition of the following subparagraph:

§ 301.48b Administrative instructions to inspectors on the treatment of nursery products, fruits, vegetables, and soil, for the Japanese beetle.

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TREATMENT OF SOIL ABOUT THE ROOTS OF PLANTS

(1) Treatment of plants after digging

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(6) Ethylene dichloride emulsion dip--(i) Materials

Potassium hydroxide: C. P.
Alcohol: 190 proof ethyl alcohol
Oleic acid: crystal white olein
Ethylene dichloride: commercial

(ii) Formula

Potassium hydroxide ^{1/}	2.5 pounds
Alcohol ^{2/}	14.0 do.
Water	6.0 do.
Oleic acid	17.5 do.
Ethylene dichloride	60.0 do.
	100.0 do.

^{1/} An amount of commercial caustic potash containing an equivalent weight of potassium hydroxide may be substituted for the C. P. grade.

^{2/} Completely denatured alcohol (190 proof) may be substituted for the ethyl alcohol (190 proof).

(iii) Preparation of dip.--Mix the several ingredients in the order given in the formula. Dissolve the potassium hydroxide in the alcohol and water, add the oleic acid, and stir intermittently for about 10 minutes. Compensate for evaporation loss by the addition of alcohol and water in the ratio given in the formula. Add the ethylene dichloride and stir.

The emulsible ethylene dichloride shall have a specific gravity of about 1.070 at 25° C. (77° F.) and contain 60 percent by weight of ethylene dichloride. It shall be a clear solution that may be readily diluted with water to form a uniform, stable, milklike emulsion. The product should be kept in gastight containers in a cool place at a temperature above 4.5° C. (40° F.). At lower temperatures it will separate into layers, in which case it must be warmed to room temperature and stirred to restore it to its original and usable condition.

(iv) Caution.--Ethylene dichloride is an inflammable volatile solvent. It, the emulsible ethylene dichloride, and the ethylene dichloride emulsion should be kept away from fire, heat, and open flame. They should be used with adequate ventilation and prolonged breathing of the vapor should be avoided.

(v) Season.--The treatment must be applied between October 1 and June 1.

(vi) Temperature.--The temperature of both the dip and the plant balls at the time of dipping shall not be lower than 45° F. nor higher than 75° F. At no time thereafter, during the holding period, shall the temperature of the treated plant balls be lower than 40° nor higher than 80°.

(vii) Dosage.--Use at the rate of 1 gallon of the emulsible ethylene dichloride in 100 gallons of water. (For convenience in making small quantities use 40 cubic centimeters in 1 gallon of water.) To prepare the emulsible ethylene dichloride as a dip, add small quantities of water successively, stirring continually until a uniform, creamlike emulsion is formed. Dilute this emulsion with the remainder of the water, stir a few minutes to insure a uniform suspension, and pour into a trough or tank. This dip must be prepared immediately before using.

(viii) Preparation of plants.--Plants with root masses or balls up to 10 inches in diameter at the narrowest dimension may be treated, either bare, wrapped, or in unglazed clay pots. If wrapped, the wrapping material must be of such a nature as not to prevent the proper penetration of the emulsion into the root mass. The plant balls shall be moist but not wet.

(ix) Application.--The size of the trough or tank (wood or metal) used for the dipping vat, and the quantity of the emulsion shall be sufficient to provide a complete coverage of all the plant balls. The plant balls or pots must be immersed for a period of 10 seconds in the dip. They

may be treated either singly or in groups with the balls spaced approximately 1/4 inch apart in a wire basket or perforated tray, and arranged so as to permit of rapid penetration of the emulsion into all of the balls. In any case the plant balls or tray shall rest on the bottom of the tank. A sufficient quantity of freshly prepared, diluted emulsion shall be added to the dip so that the plant balls are completely covered during the immersion period. To reduce the hazard of plant injury, not more than the lower 1/2 inch of the plant stems should be immersed during the treatment. The contents of the trough shall be discarded and the trough rinsed out 4 hours after charging and/or when the dirt and debris exceed 2 inches in depth. The trough shall be located during plant treatments in a covered and well ventilated place. On removal of balled plants from the dip they may be allowed to drain into the tank for 1 or 2 minutes and then must be placed in a compact group either on a bench with a tight bottom and side walls as high as the plant balls, or on a tight floor of a greenhouse, packing shed or other enclosed area, and surrounded by wooden side walls as high as the plant balls. If they are placed on a dirt floor it must be wet and packed hard before using. In the case of potted plants any excess emulsion should be poured from the pot immediately after removing from the dipping vat. All plants must remain undisturbed for the prescribed 48 hours during which time excessive ventilation should be avoided. A light spray of water applied to the tops of the plants during this period may be beneficial.

(x) Period of treatment.--Ten-second immersion in the dip followed by a 48-hour holding period.

(xi) Varieties of plants.--The list of plants which have been successfully treated in experimental work include 18 varieties of azaleas, 60 kinds of greenhouse plants, 48 kinds of perennials, and 28 kinds of trees and shrubs. The list is subject to expansion and will be furnished on request.

(7 CFR, § 301.48; sec. 8, 39 Stat. 1165, 44 Stat. 250; 7 U.S.C. 161)

Done at Washington, this 4th day of September 1942.

P. N. ANNAND,
Chief

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